

## *Laspeyresia saltitans* Westw. (Olethreutinae) the Mexican Jumping Bean Moth

By JOHN L. GREGORY

On 13th September 1969, I arrived home at mid-day to find that a parcel had been left for me by the postman, and it had been placed on a small table to await my return. On approaching the parcel I soon realised that it was making quite a loud noise, like the ticking of a few hundred miniature time bombs, or like heavy rain falling on a tin roof. Now I have many times received from entomologists parcels which rattle when moved or tilted, particularly when several items have been packed, not too securely, in the same parcel. But this was the first time I had received a parcel which was such a rattling good one that it rattled on its own. I bet the G.P.O. were glad to get it off their hands.

The noise ceased abruptly the moment I picked up the parcel preparatory to opening it. Inside was a batch of jumping beans which had been sent to me by Mr William Wilson of Helensburgh, Dunbartonshire.

During the following weeks I distributed many of the "beans" to other entomologists, and retained some for my own observations. The details of the life history of the jumping bean are quite widely known. *Laspeyresia saltitans* Westwood occurs in Mexico on *Sebastiana pavonia* (Euphorbiaceae), the ova being laid in June on the flowers, and the subsequent larvae feeding up fast in the seeds, only one larva to a seed. In July when the seeds are ripe, they fall, and those which contain a larva are completely hollowed out so that only the outer shell remains. The dry heat of semi-desert conditions causes the larva to jump, and to keep on jumping inside its prison, presumably in an attempt to find shade and to find a hiding place safe from predators. Each larval jump moves the "bean" anything up to about one quarter of an inch in a horizontal direction, and at maximum activity the jumps may exceed one hundred per minute. As the species is univoltine in nature, and pupation takes place shortly before emergence, the larva would be capable of causing its "bean" to jump continuously for about nine months! And in fact, some of my own beans were still able to jump at well over twelve months old. Gentle warmth (not excessive heat so as to roast them alive) keeps the larvae in healthy jumping condition.

I cut open a few of the "beans" in order to study the larvae, and one of the obvious things which immediately struck me was the virtually complete absence of frass inside the "bean" and there appeared to be no exit-hole to the outside world through which frass could have been ejected. I am forced to the conclusion that the larva must absorb in its body practically the whole of what it eats. The kernel of the "bean" is devoured entirely, and the inside of the shell is lined with a thin layer of silk.

So that I could watch the behaviour of the incarcerated larvae, I cut a small hole in each of several "beans", and then covered the hole with cellophane. I soon found that the cellophane windows were really unnecessary as the larvae were unwilling to abandon "beans" with even quite large holes cut in them. Some of them eventually repaired the damage as well as they could with fresh silk, but others did not. The larvae in the opened "beans" were as willing to demonstrate their powers in jumping as were those which I had left intact.

The jumping is produced by the larva gripping the silk-lined shell with the anal claspers and hind pair of prolegs, bending the rest of the body upwards and backwards with a slight stretching movement, almost to a semi-circle, then rapidly straightening, or almost straightening the body, thus bringing the underside of the thorax into hard contact with the inside of the "bean". The larva makes several jumps without changing the position of its rear end, then walks forward a few paces in loop-the-loop fashion, causing the bean to roll over, before it reattaches its hind end in preparation for the next series of jumps.

The larva is pale yellowish or creamy white, with a darker dorsal line, and rather small reddish brown head. Its body tapers fore and aft and is rather flattened as seen from above. It becomes distinctly more yellow before pupation. The prolegs appear small and widely spaced laterally.

When preparing to pupate, a small circular hole is bitten either completely through the shell of the "bean", or almost through it, and then a flimsy cocoon is constructed with its exit adjoining the hole in the "bean" shell. The pupa is yellowish brown at first, darker between segments, but the wing-cases and eyes soon become dark brown. The moth has a wing span of approximately seven eighths of an inch, the forewings being a light smoky grey colour marked with many fine black streaks running generally from costa to dorsum, a large blackish cloud in the terminal area, and a black, narrow wedged-shaped mark on the dorsum. The hind wings are dark grey to sooty black. My first moth emerged towards the end of May, and they have been emerging in odd ones and twos until the time of writing this article. Two females have just emerged today, the 17th November 1970

17 Grove Road, St Austell, Cornwall.

## Hydraecias in the Coastal Areas of Western Ireland

By H. C. HUGGINS, F.R.E.S.

The Hydraecias to which these notes refer are those which in the days of my youth were comprised in the all-embracing name "*nictitans*".

This included *oculea* L.=*nictitans* Bork., *crinanensis* Burrows, *lucens* Frey and *paludis* Tutt.

For thirty years now, the distribution of these species on the coast of the West of Ireland has puzzled me. *Paludis*, of course, is quite simple, there is no authentic Irish record, the only one of any importance being that of Kane's insects identified by Tutt, which Cockayne later showed were a mixture of *lucens* and *crinanensis*. Occasionally an insect turns up a greyish-green colour which, if taken on our Thames estuary marshes would be passed at once as *paludis*. This form occurs